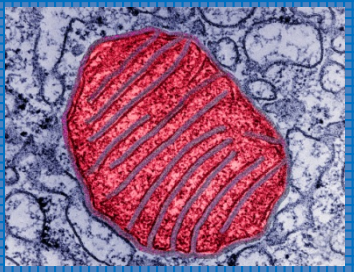
GRUPPO BIOCHIMICA e BIOCHIMICA CLINICA



Prof. Roberto Scatena – roberto.scatena@unicatt.it
Dr.ssa Patrizia Bottoni - patrizia.bottoni@unicatt.it
Dr. Carmine De Donato -

SEDE: Istituto di Biochimica e Biochimica Clinica – Università Cattolica del Sacro Cuore – Largo A. Gemelli 1, 00169, Roma. Tel. 06 3015 5135

KEY WORDS: mitochondria, cancer, cancer stem cells, drugs, TDM, biomarkers.

Our work mainly focuses on two topics:

Mitochondria and drugs. The analysis of interaction between pharmacological agents and mitochondria is an aspect of biochemistry that is too often disregarded, not only in terms of toxicology, but also from a therapeutic potential point of view and this little consideration has already caused serious clinical outcomes.

Mitochondria and cancer. The role of mitochondria in cancer is progressively increasing but yet tangled. Modulation of mitochondrial respiration, for example, may induce an arrest of cancer cell proliferation and induces cancer cell differentiation (or pseudodifferentiation) and/or cell death.
Importantly, some drugs capable of inhibit complex I showed to selectively "target" cancer stem cells.

The definition of molecular mechanisms at the basis of these interactions may also contribute to identify new diagnostic/prognostic biomarkers for various diseases (cancer, neurodegenerative diseases, sepsis, and so on).

Representative references

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